



BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT TO OPERATE

This document does not permit the holder to violate any BAAQMD regulation or any other law.

PERMIT EXPIRATION DATE

MAY 1, 2024

PLANT# 22839

Apple, Inc
3250 Scott Boulevard
Santa Clara, CA 95054

COPY SENT TO:

Tom Huynh, EHS Lead
Apple, Inc
1 Apple Park Way, M/S 319 5EHS
Cupertino, CA 95014

Location: 3250 Scott Boulevard
Santa Clara, CA 95054

S#	DESCRIPTION	[Schedule]	PAID
1	Semiconductor fab Research and Development Facility (Research and Development Facility) Abated by: A2 Packed Bed Scrubber A5 Afterburner A10 Afterburner A11 Scrubber A4 Afterburner A9 Afterburner A3 Afterburner A8 Afterburner A7 Afterburner A6 Afterburner A1 Packed Bed Scrubber Emissions at: P2 Stack P4 Stack P3 Stack P5 Stack P1 Stack	[H]	1722
2	Standby Diesel engine, 2922 hp, EPA# ECEXL060.AAD, Cummins Emergency Standby Diesel Engine Emissions at: P6 Stack	[B]	1519

The operating parameters described above are based on information supplied by permit holder and may differ from the limits set forth in the attached conditions of the Permit to Operate. The limits of operation in the permit conditions are not to be exceeded. Exceeding these limits is considered a violation of District regulations subject to enforcement action.



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S#	DESCRIPTION	[Schedule]	PAID
A10	Direct Flame Afterburner, 1277K BTU/hr max, Multifuel Thermal Processing Unit(TPU)-4C Abated by: A9 Afterburner A8 Afterburner A7 Afterburner A6 Afterburner A1 Packed Bed Scrubber Emissions at: P1 Stack	[exempt]	0
A9	Direct Flame Afterburner, 1277K BTU/hr max, Multifuel Thermal Processing Unit(TPU)-4B Abated by: A8 Afterburner A7 Afterburner A6 Afterburner A1 Packed Bed Scrubber Emissions at: P1 Stack	[exempt]	0
A8	Direct Flame Afterburner, 1277K BTU/hr max, Multifuel Thermal Processing Unit(TPU)-4A Abated by: A7 Afterburner A6 Afterburner A1 Packed Bed Scrubber Emissions at: P1 Stack	[exempt]	0
A7	Direct Flame Afterburner, 1278K BTU/hr max, Multifuel Thermal Processing Unit(TPU)-3B Abated by: A6 Afterburner A1 Packed Bed Scrubber Emissions at: P1 Stack	[exempt]	0
A6	Direct Flame Afterburner, 1277K BTU/hr max, Multifuel Thermal Processing Unit(TPU)-3A Abated by: A1 Packed Bed Scrubber Emissions at: P1 Stack	[exempt]	0

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S#	DESCRIPTION	[Schedule]	PAID
A5	Direct Flame Afterburner, 1695K BTU/hr max, Multifuel TPU-2A Abated by: A4 Afterburner A3 Afterburner Emissions at: P3 Stack P5 Stack	[exempt]	0
A4	Direct Flame Afterburner, 1695K BTU/hr max, Multifuel Thermal Processing Unit(TPU)-1B Abated by: A3 Afterburner Emissions at: P3 Stack P5 Stack	[exempt]	0
A3	Direct Flame Afterburner, 1695K BTU/hr max, Multifuel Thermal Processing Unit (TPU)-1A Emissions at: P5 Stack	[exempt]	0

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2 Permitted Sources, 8 Exempt Sources

\*\*\* See attached Permit Conditions \*\*\*

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\*\*\* PERMIT CONDITIONS \*\*\*

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Source#      Subject to Condition Numbers

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|   |       |
|---|-------|
| 1 | 26031 |
| 2 | 22850 |

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\*\*\* PERMIT CONDITIONS \*\*\*

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COND# 22850 *applies to S# 2*

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.  
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.  
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.  
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.



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- a. Hours of operation for reliability-related activities (maintenance and testing).
  - b. Hours of operation for emission testing to show compliance with emission limits.
  - c. Hours of operation (emergency).
  - d. For each emergency, the nature of the emergency condition.
  - e. Fuel usage for each engine(s).
- [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

5. At School and Near-School Operation:  
If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:

The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

"School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, athletic field, or other areas of school property but does not include unimproved school property.

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]





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\*\*\* PERMIT CONDITIONS \*\*\*

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COND# 26031 *applies to S# 1*

Plant 22839: Apple located at 3250 Scott Boulevard  
in Santa Clara, CA 95054  
Application 26855: For S-1 "Research and  
Development (R&D) Fabrication Area"  
Abated by Scrubbers (A-1, A-2, and A-11) and  
Thermal Processing Units (A-3, A-4, A-5, A-6, A-7,  
A-8, A-9, and A-10).

1a. The owner/operator of S-1 "Research and  
Development (R&D) Fabrication Area" shall not  
exceed the following gross usage limits at any  
solvent station during any consecutive twelve-month  
period:

| Solvent Sink Station | Chemical           | Gallons |
|----------------------|--------------------|---------|
|                      | DuPont EKC 922     | 240     |
|                      | DuPont EKC 265     | 240     |
|                      | NMP                | 720     |
|                      | AZ EBR AZ7030      | 48      |
|                      | Stripper Dow T1100 | 24      |

| Solvent Vapor Station | Chemical                | Gallons |
|-----------------------|-------------------------|---------|
|                       | Isopropyl Alcohol (IPA) | 12      |

[Basis: Cumulative Increase]

1b. The owner/operator of (S-1) shall not exceed  
the following gross usage limits for wipe cleaning  
within the source during any consecutive twelve-  
month period:

| Wipe Cleaning Operations | Chemical           | Gallons |
|--------------------------|--------------------|---------|
|                          | Acetone            | 240     |
|                          | 50% IPA, 50% Water | 240     |
|                          | 10% IPA, 90% Water | 250     |

[Basis: Cumulative Increase]

1c. The owner/operator of (S-1) shall not exceed  
the following gross usage limits of any photoresist  
and solvent base developer during any consecutive  
twelve-month period:  
Photoresist



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| Chemical                    | Gallons |
|-----------------------------|---------|
| Hexamethyldisilazane (HMDS) | 12      |
| n-Resist AZ nl OF 2035      | 48      |
| n-Resist Fujitsu PFi-89     | 24      |
| BCB Cyclone 3022-46         | 24      |

  

| Solvent Base Developer<br>Chemical                                    | Gallons |
|-----------------------------------------------------------------------|---------|
| TetraMethyl Ammonium hydroxide (TMAH)<br>(Basis: Cumulative Increase) | 480     |

1d. The owner/operator of (S-1) shall not exceed the following gross usage limits of any toxic inorganic liquids and organic/inorganic gases during any consecutive twelve-month period:

| Inorganic Liquids<br>Chemical           | Gallons |
|-----------------------------------------|---------|
| Ammonium Hydroxide (NH <sub>4</sub> OH) | 24      |
| Hydrochloric Acid                       | 144     |
| Sulfuric Acid                           | 1,200   |

  

| Organic/Inorganic Gases<br>Gases                      | lb/year |
|-------------------------------------------------------|---------|
| Arsine                                                | 78      |
| Phosphine (PH <sub>3</sub> )                          | 198     |
| Boron Trichloride                                     | 1       |
| Ammonia (NH <sub>3</sub> )                            | 105,600 |
| C <sub>4</sub> H <sub>8</sub> (Octofluorocyclobutane) | 1       |
| CHF <sub>3</sub> (trifluoromethane)                   | 1       |
| CF <sub>4</sub> (tetrafluoromethane)                  | 1       |
| SF <sub>6</sub> (sulfurhexafluoride)                  | 1       |
| Silane (SiH <sub>4</sub> )                            | 19      |
| Hydrogen Chloride (HCl)                               | 1       |
| Hydrogen Bromide (HBr)                                | 1       |
| Chlorine                                              | 1       |

[Basis: Toxics]

2. The owner/operator may use an alternate coating(s), cleanup solvent(s), organic liquids, and organic/inorganic gases other than the materials specified in Part 1a through 1d and/or materials in excess of those specified in Part 1a through 1d, provided that the owner/operator can demonstrate that all of the following are satisfied:





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- a. Total POC emissions from S-1 do not exceed 1.151 tons in any consecutive twelve month period;
- b. Total NPOC emissions from S-1 do not exceed 0.79 tons in any consecutive twelve month period; and
- c. The use of these materials does not increase toxic emissions above any risk screening trigger level.

For the purposes of emission calculations, 30% of the gross usage at solvent stations shall be assumed to be emitted, 100% of Hexamethyldisilazane (HMDS) and 90% of the remaining photoresist gross usage shall be assumed to be emitted, unless the Air Pollution Control Officer has provided written approval to the owner/operator of this source to use other emission factors. [Basis: Cumulative Increase; Toxics]

1. The owner/operator shall not emit more than 1.15 metric tons of CO<sub>2</sub>e from the facility wide semiconductor operation in any consecutive 12-month period. To determine CO<sub>2</sub>e emissions, the owner/operator shall use ARB's semiconductor emission calculator that can be found at the following URL:

<http://www.arb.ca.gov/cc/semiconductors/calculator/calculator.htm>.

[Basis: Title 17, CCR, Sections 95322 and 95323]

2. The owner/operator of a semiconductor operation shall submit a GHG emission report pursuant to the requirements in section 95324(b) to the BAAQMD Compliance and Enforcement Division for every calendar year by March 1 of the following year. This report shall quantify the monthly and annual emissions from the semiconductor operations. If the facility emits less than 800 metric tons/calendar year of CO<sub>2</sub>e, the facility may report emissions on an annual basis. [Basis: Title 17, CCR, Section 95324]

3. The owner/operator shall ensure S-1 is abated at all times of operation by the properly installed and properly maintained scrubbers (A-1, A-2, and A-11) and Thermal Processing Units (A-3, A-4, A-5, A-



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6, A-7, A-8, A-9, A-10). The requirement to abate emissions in Part 5 shall not apply to emissions from solvent sinks, solvent vapor stations, photoresist operations, and wipe cleaning operations. [Basis: Cumulative Increase]

6. The owner/operator shall ensure the destruction efficiency of Thermal Processing Units (A-3, A-4, A-5, A-6, A-7, A-8, A-9, and A-10) is at least 99% by weight. [Basis: Cumulative Increase]

7. The owner/operator shall ensure the destruction efficiency of scrubbers (A-1, A-2, and A-11) is at least 95% by weight. [Basis: Cumulative Increase]

8. The owner/operator shall ensure supplemental fuel used at Thermal Processing Units (A-3, A-4, A-5, A-6, A-7, A-8, A-9, and A-10) is oxygen, hydrogen gas, and/or PUC quality natural gas. [Basis: Cumulative Increase]

9. The owner/operator shall maintain a minimum operating temperature of at least 1,400 degrees F in Thermal Processing Units (A-3, A-4, A-5, A-6, A-7, A-8, A-9, and A-10) when organic and/or inorganic emissions are vented to the above abatement devices. Each of these Thermal Processing Units may be operated at temperatures lower than 1,400 degrees F if the owner/operator can demonstrate compliance with Parts 2 and 6 at the lower temperature(s) via District approved source testing required by this permit condition. [Basis: Cumulative Increase]

10. If the operating temperature(s) of the Thermal Processing Units established under Part 9 of this permit condition is changed as a result of using alternate coating(s), cleanup solvent(s), organic liquids, and organic/inorganic gases other than the materials specified in Part 1a through 1d and/or materials in excess of those specified in Part 1a through 1d, the owner/operator shall demonstrate compliance with Parts 2 and 6 at the revised operating temperature(s) via District approved



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source testing within 30-days of re-establishing the operating temperature(s) of the Thermal Processing Units. Upon completion of the source test(s) and after the source test results are submitted to the District's Source Test Section for review in accordance with Parts 16 and 17, the owner/operator shall submit a permit application to the District requesting the operating temperature(s) for the Thermal Processing Units in Part 9 of this permit condition be revised. [Basis: Cumulative Increase]

11. The temperature limit in Part 9 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller set point complies with the temperature limit. An Allowable Temperature Excursion is one of the following:

- a. A temperature excursion not exceeding 20 degrees F; or;
- b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or.
- c. A temperature excursion for a period or periods which when combined is more than 15 minutes in any hour, provided that all three of the following criteria are met.
  1. The excursion does not exceed 50 degrees F;
  2. The duration of the excursion does not exceed 24 hours; and
  3. The total number of such excursions does not exceed 12 per calendar year (or any consecutive 12 month period). Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the 12-excursion limit. [Basis: Regulation 2-1-403]

12. For each Allowable Temperature Excursion that exceeds 20 degrees F and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records shall be retained for a minimum of two years from the date of entry, and



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shall be made available to the District upon request. Records shall include at least the following information:

- a. Temperature controller set point;
- b. Starting date and time, and duration of each Allowable Temperature Excursion;
- c. Measured temperature during each Allowable Temperature Excursion;
- d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and all strip charts or other temperature records. [Basis: Regulation 2-1-403]

13. The owner/operator shall report any non-compliance with Part 9 of this condition to the Director of the Compliance & Enforcement Division at the time that it is discovered. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well at the time of occurrence. [Basis: Cumulative Increase, Regulation 2-5]

14. The owner/operator shall not emit more than 50 ppmv NO<sub>x</sub> @ 15% O<sub>2</sub> (0.20 lbs/MMBTU) from Thermal Processing Units (A-3, A-4, A-5, A-6, A-7, A-8, A-9, and A-10)  
[Basis: RACT, Source Test Method 13A]

15. The owner/operator shall not emit more than 350 ppmv CO @ 15% O<sub>2</sub> (0.80 lbs/MMBTU) from Thermal Processing Units (A-3, A-4, A-5, A-6, A-7, A-8, A-9, and A-10)  
[Basis: RACT, Source Test Method 6]

16. Within 60 days of starting up S-1, the owner/operator shall conduct District approved source tests to determine initial compliance with the parts 2, 6, 7, 14, & 15 of this permit condition. The owner/operator shall submit the source test results to the District's Source Test Section for review and approval within 60 days of the source test.  
[Basis: RACT, Cumulative Increase]





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17. The owner/operator shall submit and obtain approval of all source test procedures from the Manager of the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable source testing requirements as specified in Volume IV of the District's Manual of Procedures. The owner/operator shall notify the Manager of the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing.

[Basis: RACT, Cumulative Increase]

18. In order to determine compliance with this permit condition, the owner/operator shall maintain the following records and shall provide all of the information necessary to evaluate compliance, including the following on a monthly basis: [Basis: Record-keeping]

- a. Quantities of each type of coating and solvent used at this source.
- b. If materials other than those specified in Part 1 are used or if a material is used in excess of the limits specified in part 1, emission calculations of POC/NPOC, Fluorides and toxic component contents of each material used to demonstrate compliance with Part 2.
- c. Monthly usage and/or emission calculations shall be totaled for each consecutive twelve-month period.
- d. Quantities of each type of solvent recovered for disposal or recycling.
- e. Net Usage of each type of solvent.
- f. Copies of District approved source test results.

All records shall be retained on-site for two years from the date of entry and shall be made available for inspection to District staff upon request. The records may be in the form of computer-generated data, which is available to District personnel on short notice (rather than actual paper copies). These record-keeping requirements shall not replace the record-keeping requirements contained in any



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applicable District regulations. [Basis:  
Cumulative Increase, Toxics]

~~~~~ END OF CONDITIONS ~~~~~